

PATENT CLAIMS

1. Recombinant plant genome, characterized
5 in that it comprises specific chicory genes and a nucleotide sequence conferring male sterility, which is borne by the sunflower orf 522 sequence (*Helianthus annuus*) or by a sequence with at least 50% homology with the said orf 522 sequence.
- 10 2. Mitochondrion, characterized in that it comprises a recombinant genome according to Claim 1.
3. Mitochondrion according to Claim 2, characterized in that it comprises at least one nucleotide fragment of 347 bp which is borne by the orf
15 522 sequence or a sequence with at least 50% homology with the said fragment.
4. Recombinant plant cytoplasm, characterized in that it comprises a nucleus comprising the genome of the genus *Cichorium*, and a recombinant
20 genome according to Claim 1.
5. Cytoplasm according to Claim 4, characterized in that it comprises mitochondria comprising a nucleotide sequence borne by the *Helianthus annuus* orf 522 sequence or by a sequence
25 with at least 50% homology.
6. Cytoplasm according to Claim 5, characterized in that it comprises mitochondria according to Claim 3.
7. Recombinant plant cell, characterized in
30 that it comprises a cytoplasm according to one of Claims 4 to 6.
8. Plant cell according to Claim 7, characterized in that it comprises a nucleus comprising essentially the genome of a species selected from
35 amongst *Cichorium intybus* and *Cichorium endivia*.
9. Method of producing a plant of the chicory genus or the reproduction material of this plant which exhibits cytoplasmic male sterility, characterized in that a nucleotide sequence borne by

the *Helianthus annuus* orf 522 sequence or by a sequence with at least 50% homology with this orf 522 sequence is integrated into the cellular genome of the said plant.

5 10. Use of the *Helianthus annuus* orf 522 sequence or of a sequence with at least 90% homology with the orf 522 sequence to confer cytoplasmic male sterility to a plant of the genus *Cichorium*.

10 11. Method of selecting cytoplasmic male sterility in a plant of the genus *Cichorium*, characterized in that the mitochondrial nucleic acid of the plant is brought into contact with a labeled probe comprising at least 10 nucleotides of the orf 522 sequence.

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